REMARKS/ARGUMENTS

Applicants and Applicants' attorney express appreciation to the Examiner for the courtesies extended during the recent interview held on March 30, 2005. Reconsideration and allowance of the above-identified application are now respectfully requested. Claims 49-64 are pending, wherein claims 1, 7, 12-16, 27-29, 36-39, 48, 49, 56, 57 and 64 have been amended. Claims 49-64 are currently withdrawn from consideration as being drawn to a non-elected invention. Nevertheless, Applicants request rejoinder of the withdrawn claims upon the allowance of the elected claims in view of the fact they are commensurate in scope and therefore do not raise additional issues that would require an additional search by the examiner.

As discussed during the Examiner Interview, the present invention is directed to intermediate precursor compositions that are formed using specific materials and in such a way as to be capable of forming a supported reactive catalyst in which the catalyst atoms on an upper surface of the catalyst particles have a nearest neighbor coordination number of 2. Catalyst atoms arranged in this manner have been found to have increased specificity toward certain reactions among competing reactions. For example, such catalysts have been shown to exhibit increased specificity to the manufacture of hydrogen peroxide over water when used in combination with a feedstock containing a mixture of hydrogen and oxygen gases. Obviously, hydrogen peroxide is much more valuable than water from a commercial standpoint.

As further discussed during the Examiner Interview, U.S. Patent No. 6,740,615 to Zhou does not teach or suggest the manufacture of intermediate precursor compositions that inherently form a supported reactive catalyst in which the catalyst atoms on an upper surface of the catalyst particles have a nearest neighbor coordination number of 2. Instead, Zhou discloses a method for regenerating used noble metal catalysts using an organo-metallic complex forming agent in order to break down agglomerated catalyst particles and redistribute them on a support as smaller catalyst particles. Col. 2, lines 24-30. Exemplary organo-metallic complex forming agents are set forth in the table at col. 3, lines 7-10. They include citric acid, glycolic acid, succinic acid, glycine, and salicylic acid. Glycolic acid and other such molecules are described in U.S. Patent No. 6,746,597 to Zhou et al. as having a "high selectivity for exposing specific (111) metal faces". Col. 5, lines 35-36. As discussed in the present application, catalyst particles in which the catalyst atoms on an upper surface of the catalyst particles have a nearest neighbor coordination number of 2 are exemplified by the (110) crystal phase exposure, which is depicted

in Figure 1A of the present application and also in Figure 1a of Zhou et al. Instead of being coordinated with two other catalyst atoms and having a nearest neighbor coordination number of 2, the organo-metallic complex forming agent utilized in Zhou is described in Zhou et al. as yielding a catalyst having a (111) crystal face exposure. As shown in Figure 1B of the present application and also Figure 1c of Zhou et al., catalyst atoms in the (111) crystal face exposure have a coordination number of 6, not 2. Accordingly, Applicants submit that the claims as amended are neither anticipated by, not obvious over, Zhou, either alone or in combination with any other art of record.

U.S. Patent No. 6,528,683 to Heidemann et al. was also discussed during the Examiner interview. As agreed by the Examiner, Heidemann et al. neither teaches nor suggests the formation of a catalyst complex between individual catalyst atoms and complexing molecules of a complexing agent. Instead, Heidemann et al. discloses forming a suspension of active metal oxide particles, which are not readily soluble in any of the solvents disclosed therein, and a cross-linkable polymer system comprising a polymer and an alknolamine. Col. 3, lines 33-61. A supported catalyst is "obtained by spraying an aqueous active material suspension comprising the active metal oxides at relatively high temperatures onto the carrier material at 50-450° C". Col. 3, lines 36-44. The purpose of the alknolamine is to cross-link the polymer upon spraying the suspension mixture onto the support at elevated temperature. Col. 3, lines 62-65. Heidemann et al. neither teaches nor suggests "forming a catalyst complex between the catalyst atoms and the complexing molecules" of a control agent. Moreover, due to the fact that cross-linking occurs the moment the aqueous suspension is sprayed onto the support at elevated temperatures, it is highly unlikely that the aqueous suspension of Heidemann et al. would be capable of forming a supported reactive catalyst in which a preponderance of the catalyst atoms on an upper surface of the catalyst particles have a nearest neighbor coordination number of 2 even if a catalyst complex were, in fact, formed. Bonding catalyst particles to a support using the bonding system of Heidemann et al. is not capable of rearranging the catalyst atoms in any manner, let alone so as to have a nearest neighbor coordination number of 2. Moreover, even if somehow the catalyst atoms of the catalyst particles become complexed with the polymer system, the fact that the alknolamine causes the polymer to cross-link immediately upon spraying it onto the support at a high temperature means that substantially all of the polymer would be in cross-linked, rather than straight-chain, form.

Claim 1 as amended distinguishes over Zhou and Heidemann et al. in that it requires at least about 50% of the complexing molecules to be straight chained molecules that include at least four functional groups per molecule and which forms a catalyst complex with the catalyst atoms that is capable of forming a supportive reactive catalyst in which a preponderance of catalyst atoms on an upper surface of the catalyst particles have a nearest neighbor coordination number of 2. As agreed to during the examiner interview, neither Zhou nor Heidemann et al. teaches or suggests any such catalyst complex.

Independent claim 37 alternatively recites a control agent comprising polymers and oligomers, at least about 50% of which are straight chained and which form a catalyst complex with the catalyst atoms that is capable of forming a supported reactive catalyst in which a preponderance of the catalyst atoms on the upper surface of the catalyst particles have a nearest neighbor coordination number of 2. For substantially the same reasons given above, claim 37 is also patentable and nonobvious over Zhou and Heidemann et al.

The dependent claims are likewise patentable over Zhou and Heidemann et al., and further include additional limitations that may further distinguish over these references.

Independent method claim 49 has been amended so as to be commensurate in scope with claim 1, and independent method claim 57 has been amended so as to be commensurate in scope with independent claim 37. As a result, Applicants believe that method claims 49-64 are suitable for rejoinder upon the allowance of claims 1-48. Accordingly, Applicants respectfully request reconsideration and allowance of claims 49-64. Nevertheless, Applicants confirm their election of claims 1-48 of Group I without traverse relative to claims 49-64 of Group II.

Applicants have also amended the claims in order to address the claim objections set forth at pages 3 and 4 of the Office Action, as well as the rejection of claims 1-48 under 35 U.S.C. § 112, first paragraph, set forth at page 4. Reconsideration and withdrawal of these objections is respectfully requested.

In view of the foregoing, Applicants believe that the claims as amended are in allowable form. In the event the Examiner finds any remaining impediment to the prompt allowance of this application that may be clarified through a telephonic interview, or that may be overcome by Examiner Amendment, the Examiner is requested to contact the undersigned attorney.

Dated this 4th day of April 2005.

Respectfully submitted,

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